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ABSTRACT

This research study investigated the theoretical reading orientation (sound-centered, word-centered, or meaning-centered) and reading performance of 20 students of various language backgrounds and proficiency levels in an adult English-as-a-second-language program. The research attempted to test the hypothesis that these readers would be able to verbalize their orientations towards reading and that the orientations would affect reading performance. Data were gathered from an oral reading interview, an oral reading sample, and a retelling of the oral reading. Analysis indicated that almost all students were able to articulate their theoretical orientations unambiguously enough to allow classification in one of the reading process models. In addition, a relationship was found between the internalized reading process model and the reader's success in comprehending the text material. Second language reading teachers should be aware that students bring to the reading task a set of assumptions and operating principles concerning what is important in reading, and should attempt to identify the students' individual models and adapt instructional materials and activities to those processes. (MSE)

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ESL Readers' Internalized Models of the Reading Process[1]

Joanne Devine

Models of reading represent a set of assumptions about what happens when people read, that is, about the ways that the readers go about deriving meaning from a printed text and the relative importance of various aspects of the reading process. For a reader approaching a text, a model of reading can be regarded as the guiding principles by which that reader will process the information available. As Harste and Burke (1977) explain, an internalized model of reading—in their term a "theoretical orientation"—is a ". . . system of assumptions through which experiences [in this case, the experience of confronting printed material] are organized and acted upon . . . [they are] schemata which govern behavior" (1977:1). A current view informing much of the work in ESL reading is that investigations of reading in a second language and instructional materials should be based on a clearly articulated and consistently applied model of the reading process (see, for example, Rigg, 1977; Clarke and Silberstein, 1977; Hudelston, 1980; Renault, 1981; and Rigg, 1981). Frequently, however, little attention is paid in practice to the actual internalized models of reading that L2 readers may bring to a text.

Studies of children learning to read in their native language have focused on readers' theoretical orientations or models of reading. Harste and Burke (1977) and Rhodes (1979) found that even very young readers (age six) could explain what they did when reading and were able to articulate their notions about what constitutes good reading. These researchers identified three distinct models of the reading process held by the young native readers they studied, models based on the language focus and unit emphasized: first, a decoding or sound-centered model; second, a skills or word-centered model; and finally, a meaning-centered model (more later

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on these models). When the theoretical orientations of these readers were later compared to examples of the subjects' oral reading, it was found that the way these readers conceive of the reading process affects both how the task is approached and to some extent the success of the effort. In discussing ten subjects whose oral responses to questions about reading indicated that they held a sound-centered model of reading, that is, a model orientated towards identifying the individual sounds of the text words, Rhodes concludes:

> The children's theoretical orientations had a limiting and pervasive influence on reading strategies . . . ; all ten children focused on the graphophonic system and did not effectively use the syntactic and semantic systems while reading . . . (1979:144).

Studies like those of Rhodes, Harste and Burke, and others which demonstrate a relationship between models of reading more or less imposed by instructional methods and patterns of oral reading errors (Delawater, 1975; Dank, 1976; Ogle, 1974; and Norton, 1976) provide convincing evidence that readers possess internalized models of the reading process and that these models affect reading performance. These results raise a number of important questions about ESL reading: how do second language learners conceive of the reading process and how might their internalized models influence reading behavior? The current investigation was designed to offer preliminary answers to these questions.

Specifically, the study attempts to determine what internalized models of reading beginning ESL students may have and to assess the impact of these models on their reading performance. Two general hypotheses were formulated concerning these readers. First, the readers would have internalized models of reading which they could articulate and second, that these models would affect reading performance in two ways: in the type of print information the reader focuses on in reading and in the success of the reader in understanding textual meaning.

A note of caution should be voiced at this point. Attempts to characterize intricate cognitive activities, such as those involved in language use, present special problems for a researcher. It is often difficult for language users to articulate models of complex mental processes because these mental operations are not available for introspection in the usual sense. For a non-native speaker of a language this difficulty may be compounded by an inability to express ideas in a new language. Furthermore, as many researchers have noted, cognitive processes may involve a number of strategies; positing a single underlying model may be a vast oversimplification. In the case of reading, for example, a language user might employ one strategy for reading a novel, and quite a different strategy for reading scientific or technical material. Results of the current study should be interpreted with this caution in mind.

THE STUDY

Subjects

The research investigated the theoretical orientation and reading performance of twenty students studying in a community-based ESL program in East Lansing, Michigan. All were beginning/low intermediate level students (level two in a program with four proficiency levels), as determined by the University of Michigan

Placement Test. The 18 females and 2 males reported on came from a wide variety of language backgrounds including Spanish, Arabic, Korean, Polish, Hungarian, Farsi, Portuguese, Chinese and Woolof. Their experience with English was equally varied; a third of the students had not formally studied English before enrolling in the program, while the remaining two-thirds had studied English either in the United States or in their native countries, for periods ranging from six months to a full ten years. Only two of the subjects had not finished high school; nine were high school graduates; and nine had completed college. The ages of the participants ranged from 19 to 40.

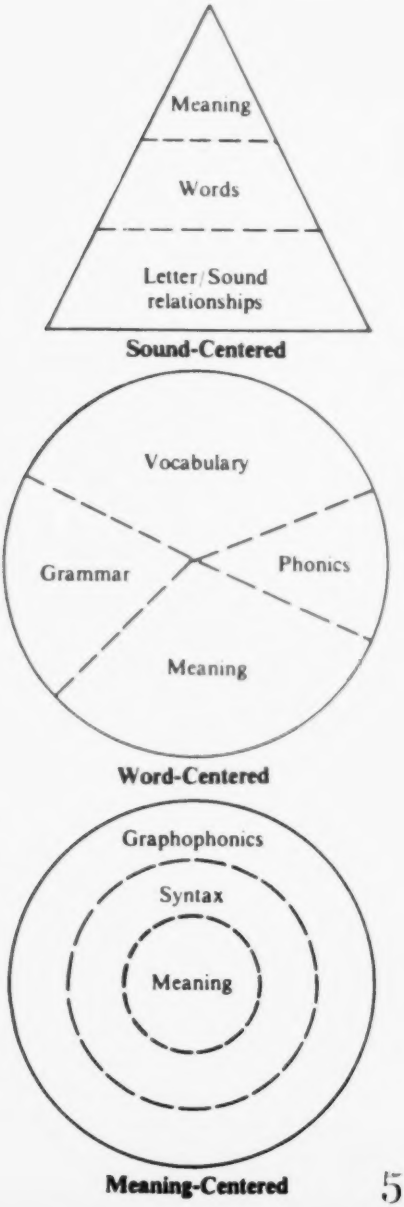
Data Collection and Analysis

In order to test the hypothesis that these readers would be able to verbalize their theoretical orientations towards reading and that the orientations would affect reading performance, three sets of data were gathered for each subject: an oral reading interview, a sample of oral reading, and a retelling (summary) of the oral reading. In the reading interview, an audiotape was made of the subjects' responses to questions designed to uncover general attitudes about reading, ideas about what constitutes good/effective reading, notions about the relative importance of various aspects of reading (for example, word recognition and concept understanding), and information about the way individual readers use the various cues available in a printed text. The format of the interview was adapted from Burke (1978); examples of the questions appear in Appendix A.

Transcripts of the reading interviews were closely examined by at least two researchers for any statements providing evidence of the readers' theoretical orientations. Depending on the language units they profess to focus on or indicated they considered important to effective reading, the subjects were classified as sound-, word-, or meaning-orientated, using models postulated by Harste and Burke (1977). It should be noted that there are problems with the use of oral reading interviews. Subjects may indeed possess models of reading that they are unable to articulate because of limited proficiency in oral expression. In addition, there are undoubtedly models of the reading process other than the three mentioned above that the readers may be operating from (for example, highly idiosyncratic models in which the reader attempts to memorize entire texts, or approaches involving the use of information not derived directly from the texts, as suggested by schema theory). These classifications were used to group reader responses because they provide an easy, if arguably oversimplified, way of focusing on readers' theoretical orientations based solely on measureable textual features. Furthermore, various studies using the Reading Interview indicate that readers do indeed possess internalized models of the reading process that can legitimately be classified as sound-, word-, or meaning-orientated.

Figure 1 provides a graphic illustration of the three models of the reading process mentioned above. In a sound-orientated model, a reader believes that written language should be broken down and approached on the level of sound. Once the sounds of the language have been correctly identified, the reader may then build words and eventually meaning from the information in the text; however, in this view of reading it is sounds, not words or meaning, that are the most important. Readers possessing a sound-centered model will often insist that sounds must be treated in isolation from the other aspects of reading. In fact, for these readers, a mastery of sounds, as evidenced by *good* pronunciation, appears to define good

Figure 1. Three Models of the Reading Process (see Harste and Burke, 1977)



reading. The readers of the current study who were classified as sound-orientated responded to questions about what makes reading difficult for them with answers such as "the sounds," "the pronunciation," and "the alphabet." When asked to name and describe a good reader, a subject from this group offered the following typical answer: "My teacher . . . he pronounces . . . beautiful and slow."

Readers who have a word-centered model of reading emphasize the importance of learning vocabulary items as a way to insure good reading. One word-centered reader in the current study neatly summarized this approach to reading: "I am a student of words." Word-centered readers stress the importance of the dictionary in reading; they seem to consider individual vocabulary items so important that they will stop their reading to consult the dictionary or ask someone what the words mean. Another reader in this research explained: "If it [something she does not understand] is important I can discover it in the dictionary. It is not important that I try to know the meaning while I read, but the words." This type of reader believes that word recognition is a necessary prerequisite to effective reading; it may in fact constitute good reading for word-centered readers. Meaning, then, becomes a collection of the meanings of individual words in the text. As the diagram in Figure 1 illustrates, reading is viewed as the sum of a number of skills, the most important of which is word recognition; other skills may contribute to the process—grammar for instance, was mentioned by three of the readers in the current study as important—but only after vocabulary.

Readers possessing a meaning-centered model of reading regarded the ability to understand the meaning of a text as the measure of success in reading. Readers of this type reject the notion that meaning can be found in sounds, words, or even the grammatical structures found in the text; rather they use this information to help them determine the meaning. Meaning-centered readers often guess the meaning of things they don't understand in a text, using the sounds, words and grammar to help formulate their guesses. Although meaning-centered readers do at times consult a dictionary, their attitudes about word recognition are decidedly different from those with a word-centered approach. A reader in this study explained: "I just try to read and if I can't, I guess the meaning. If I don't know a word, I just write the word on the paper. I don't want to use the dictionary." Another reader suggested that rereading, rather than consulting a dictionary, was the best way to understand meaning.

In addition to the taped reading interview, two other sets of data were gathered from each subject: a sample of an oral reading of a short story reading selection and an unaided retelling (or summary) of that selection. The insights concerning the readers' theoretical orientations provided by the reading interview were eventually compared to the subjects' oral reading behavior and to their retellings in order to assess the impact of the readers' internalized models on reading performance. The procedures for collecting tapes of oral reading and unaided retelling followed Goodman and Burke (1972). Various researchers have discussed the difficulties and problems inherent in evaluating reading through the use of oral reading samples. Clarke (1979) points out that oral reading studies are based on the untested assumption that oral reading is equivalent to silent reading. He also questions the reliability of assessments of reading proficiency based on subjects' oral retellings, noting the difficulty of getting readers to provide a full account of what they remember (and in some cases of getting readers to speak at all); the evaluation of these open-ended retellings is also problematic. Wixson (1979) and Leu (1982) discuss these and other

methodological issues involved in the use of oral reading data. These concerns clearly deserve attention in future reading research. It was thought, however, that for the current study, an oral reading would provide the best, perhaps the only, view of the specific ways readers applied their internalized models of reading to actual encounters with a text.

In order to obtain a detailed picture of the reading behavior of the subjects that might later be compared to models of reading identified through the reading interview, a Miscue Analysis was performed on each subject's oral reading. This analysis examines every deviation from the printed text (each *miscue*) in terms of its relationship to the graphophonic, syntactic, and semantic features of the text.[2] Based on information obtained from the Miscue Analysis, profiles were constructed of the readers' use of the various cues available in the text—sound/letter, grammatical and meaning cues—and their production of non-word substitutions. These profiles were later used to determine what influence, if any, the internalized models of the reading process the subjects possessed had on the types of cues focused on in the actual reading.

The retellings of summaries of the oral reading were transcribed and evaluated on a very broad six-point scale ranging from very poor to excellent, depending on the amount and accuracy of the information the subject could provide about the characters, events, and implied meaning of the story. In subsequent comparisons of the subjects' theoretical orientations towards reading and their comprehension of the text, these retelling evaluations were treated as the measure of reader success in understanding the story.

Results

Two hypotheses were earlier posited concerning beginning ESL readers' internalized models of the reading process and the impact of these models on reading performance:

1. the readers would have internalized models which they could articulate
2. these models (or theoretical orientations) would affect reading performance in two ways—
   a. in the type of print information the reader focuses on in reading
   b. in the success of the reader in understanding textual meaning.

To test Hypothesis One, the reading interview was used to determine what theoretical orientations, if any, the readers might hold about reading. For Hypothesis Two, the oral reading and retellings were treated as two different measures of reading performance to which the subjects' models of reading might be compared. The analysis of the oral readings provided profiles of the subjects' use of the various cues available in the text and the retellings supplied information about the reader comprehension of the text material.

Hypothesis One: Readers will have internalized models of the reading process that they can articulate. Only one of the twenty readers in the current study could not offer any answers to questions concerning her reading behavior; her failure to

[2]Readers who are unfamiliar with Miscue Analysis or who would like more information on Psycholinguistics and Reading are referred to works in the bibliography by Goodman, Smith, and Weaver.

provide this information might indeed mean that this reader has no clearly developed theoretical orientation towards reading. On the basis of her answers to the interview questions, however, it seems more likely that this subject simply did not understand the questions being put to her. Of the 19 other readers studied, 6 were classified as sound-centered, 7 as word-centered, and the remaining 6 as meaning-centered.

Although many of the subjects, especially those with word and meaning orientations, indicated that they used more than one strategy in their reading, the importance they attributed to the various cues available in the text eliminated most of the possible ambiguities in classifying these ESL readers. For example, Marina, designated a meaning-centered reader, conceded that there are many words that she does not understand when she reads in English. However, she makes it quite clear that for her, meaning, not word identification, is central to good reading.

> Researcher: What do you do when you don't understand something?
> Marina: Sometimes I look the word up in the dictionary, but usually I guess. It is important that I understand the whole meaning.

On the other hand, a word-centered reader, after citing both grammar and meaning as important for successful reading, went on to explain how she dealt with problematic material encountered in a text: "The dictionary, my main help is the dictionary . . . people from the United States don't have the problem with reading; they don't need the dictionary because they learn the words to read . . ." The results of the reading interview appear to confirm the first hypothesis; these beginning ESL students do have internalized models of the reading process which they bring to the reading task. Nineteen of the twenty subjects of the current investigation were able to articulate these theoretical orientations unambiguously enough to allow their classification as sound-, word-, or meaning-centered readers. The second hypothesis deals with the impact of these internalized models on actual reading performance.

Hypothesis Two. Models of reading will affect reading performance in two ways: (a) in the type of print information focused on and (b) in comprehension of text meaning. In order to test the first part of this hypothesis, the profiles of the subjects' use of the graphonic, syntactic and semantic cueing systems in their reading, derived from the Miscue Analysis of the oral readings, were compared to the theoretical orientations determined through the reading interviews. The expectation is that a correspondence will exist between the model of reading and the degree to which the reader employs the various cueing systems available in the text. It is expected, for instance, that sound-centered readers will focus most heavily on the sounds and letters of the text words (see Figure 1). As a result, their miscues will bear a high similarity to the graphic and sound features of the expected responses; their use of meaning cues available in the text, as seen through the semantic acceptability of their miscues, would consequently be diminished because of this over-reliance on print information at the expense of meaning. The use of syntactic cues would perhaps not be greatly affected since miscue studies show that all readers tend to produce a very high percentage of syntactically acceptable miscues. In addition, sound-centered readers would be likely to produce a relatively high number of non-words in their oral reading. These non-words would closely match the letters and sounds of the text word, the central concern of this type of reader.

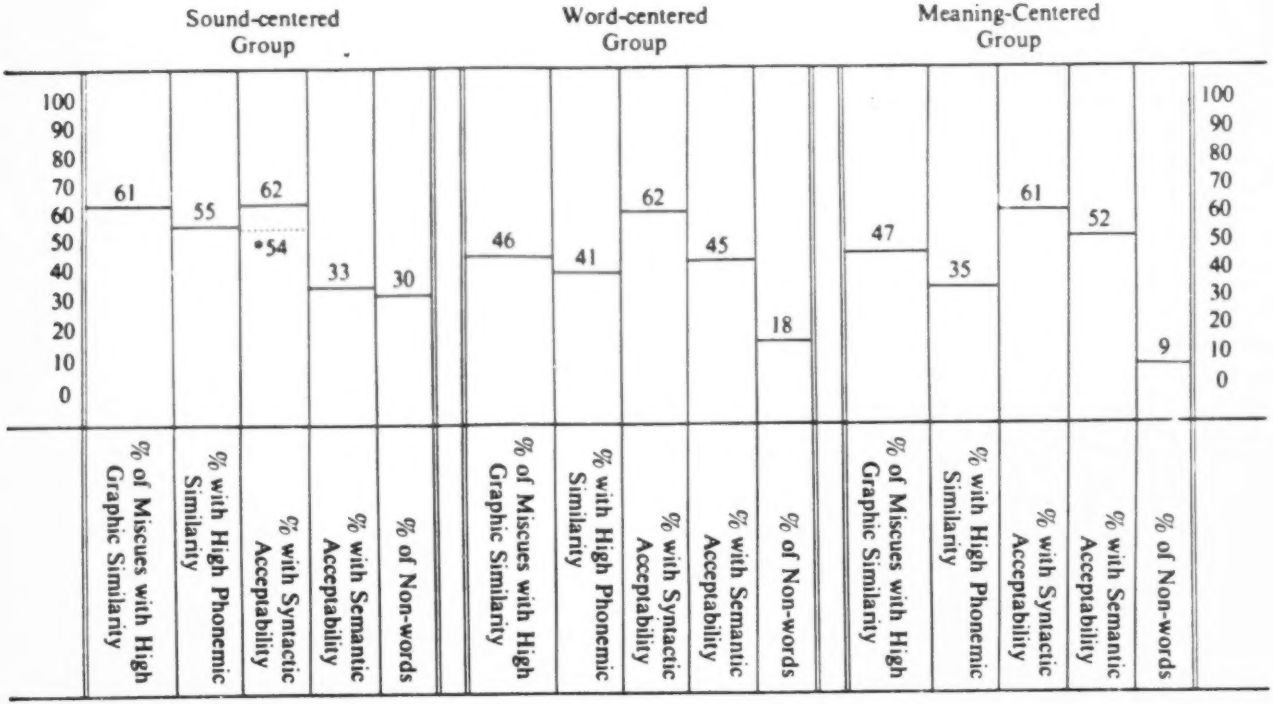
The strategies of both word- and meaning-centered readers would result in less reliance on the graphophonic cueing system. The degree of similarity between their miscues and the expected response, while it might remain high, would be lower than that of the sound-centered readers. Furthermore, their use of the other two cueing systems would be more balanced; this group would tend to use all three types of information available in the text. Although again a high degree of syntactic acceptability was expected, the chief difference between the profiles of these different groups of readers would be in their concern for preserving the semantic features of the expected response. Meaning-centered readers might be expected to have a higher percentage of semantically acceptable miscues because of their concern for understanding the meaning of the text, that is, for making sense of what they read. Both groups of readers would have a lower percentage of non-word miscues, the word-centered subjects due to their concern for identifying actual words, and the meaning-centered readers because of their attempts to preserve sense and meaning in their reading. For both groups, it is expected that there will be more balance in the use of graphic and semantic cues than for the sound-centered readers.

Although separate profiles were compiled for the readers (complete information on all the readers in the study appears in Appendix B), the first part of Hypothesis Two can perhaps best be tested by examining the performance of the three groups of readers. As Figure 2 illustrates, profiles of the use of the cueing systems by the groups are in fact different. The use of syntactic information is virtually equal by all groups, a finding consistent with other miscue studies. The profiles for graphophonic and semantic acceptability of miscues closely match those projected for readers with the differing theoretical orientations. Notice especially for the sound-centered readers the high mean scores for graphic and phonemic similarity to the text words (66% and 56%) and the high percentage of non-words produced (30% of all miscues). Notice too the relatively low mean scores for the semantically acceptable miscues (33%) suggesting that sound-oriented subjects' central concern rests primarily with reproducing the sound/letters of the text rather than with preserving meaning. Readers classified as word- and meaning-centered appear to focus less on the words and letters of the text words than those with a sound-orientation. Instead, they use all three types of cues in more equal proportion. As expected, meaning-centered readers produced miscues which were judged semantically acceptable more frequently than those of the word-centered or sound-centered readers (52%—45%—33%). And, although word-centered readers' average percentage of non-words is double that of meaning-oriented readers (18% of all miscues compared to 9%), that mean is still considerably below that of the sound-centered readers (30%).

As noted above, the mean score for syntactic acceptability was almost identical for all groups of readers. Interestingly, however, if non-words, which account for almost one-third of all miscues are eliminated from consideration for the sound-centered readers, the mean score for syntactically acceptable miscues drops to 54%. As has often been noted, non-words may retain the syntactic features of the text word (through inflection, for example), but at the same time may be indicative of readers' use of graphic or sound cues rather than of their use of grammatical information. The same adjustment of non-words for the other groups of readers does not significantly alter the mean scores for syntactic acceptability.

An Analysis of Variance performed on the data in Figure 2 shows the following:

Figure 2. Reading Miscue Analysis: Profile of Readers' Use of Print Information by Groups



*% of Miscues Syntactically Acceptable excluding Non-Words

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(1) the F (Cueing System), df (3,162) = 8.826; $p < .001$ and (2) the interaction of F (Cueing System x Internal Model), df (6,162) = 3.568; $p < .01$. See Table 1. The first result indicates a significant ($p < .001$) difference for the readers in the use of the graphic, phonemic, syntactic, and semantic cueing systems. The interaction of the cueing systems and the reading model is illustrated in the second result: scores for cueing systems depend on the model of reading ($p < .01$). A Tukey's Post Hoc Analysis showed that significant differences exist between the following sets of scores:

—Meaning-Centered Semantic and Sound-Centered Semantic ($p < .01$)
—Sound-Centered Phonemic and Word-Centered Phonemic ($p < .05$)
—Sound-Centered Phonemic and Meaning-Centered Phonemic ($p < .01$)
—Word-Centered Graphic and Sound-Centered Graphic ($p < .05$)

Although within each of the groups of readers there was variation in the use of cueing systems in oral reading (some of this variation will be discussed later), both a broad comparison of the profiles of the three groups' reading behavior and an Analysis of Variance confirm the first part of the second hypothesis. The internalized model of reading that the subjects hold influences the type of print information they focus on in oral reading.

Table 1: ANOVA Summary

Source	SS	df	ms	F	p
Total	143989.8	227			
Internal Model*	305.6	2	152.8	.06	NS
Error	132205.45	54	2448.25		
Cueing Systems**	1448.01	3	482.67	8.826	$p < .001$
Internal Model x Cueing System	1170.82	6	195.14	3.568	$p < .01$
Error	8860.55	162	54.69		

*Internal Models: Word-, Sound,- or Meaning-Centered.
**Cueing Systems: Graphic, Phonemic, Syntactic, and Semantic.

The second part of Hypothesis Two predicts that the theoretical orientation of the reader will affect comprehension. Evaluations of the unaided retellings of the reading selections were used as the measure of the subjects' understanding of the meaning of the text. As with the readers' use of cues, it is here anticipated that the theoretical orientation will influence reading performance. Specifically sound-centered readers will be expected to have little comprehension of what they read since their attention is focused on reproducing the sound and letter units of the text. Word-centered readers would be more successful in understanding meaning than sound-centered readers. Even though the primary interest is individual vocabulary items, these readers nonetheless attempt to build meaning through the identification of words and other features in the text. As the name given the third group implies, meaning-orientated readers would be expected to evidence good comprehension of the meaning of the material.

Table 2 provides a summary of the evaluations of each reader's comprehension of the story. The table shows that the meaning-centered readers demonstrated good to excellent comprehension as predicted. On the other end of the spectrum, the sound-centered readers were judged to have either poor or very poor comprehension

Table 2: Retelling Evaluations by Individual Reader and by Groups

Sound-Centered Readers		Word-Centered Readers		Meaning-Centered Readers	
Reader 1	Poor	Reader 7	Poor	Reader 14	Good
2	Poor	8	Poor	15	Good
3	Very Poor	9	Poor	16	Excellent
4	Very Poor	10	Very Poor	17	Excellent
5	Poor	11	Very Good	18	Very Good
6	Very Poor	12	Fair	19	Excellent
		13	Fair		

of the meaning of the selections they read; these results match the expectations concerning these two groups' internalized models of reading and their reading performance and the second part of Hypothesis Two: the theoretical orientation does seem to affect reader understanding.

The comprehension pattern of the word-centered readers is a bit more problematic. Three of the seven readers were judged to have poor comprehension and two others, fair, results within the expectations for readers with this theoretical orientation and broadly confirming the hypothesis. However, one reader (#10) seems to have very little comprehension while another (#11) apparently comprehended the reading selection very well. The other data on the reading behavior of these two subjects further complicate the picture (data summarized in Table 3). Reader #10 has a low score for the use of graphic information (36%) and a moderate one for the use of phonemic or sound cues (45%). Her syntactic acceptability is the highest recorded for any reader in the study (76% of all miscues syntactically acceptable) and the percentage of her miscues which were semantically acceptable ranks with those of the meaning-centered group (52%). In both the reading interview and the retelling, this subject showed a general reluctance to speak in English and it might be the case that the retelling evaluation (based as it is on information reported by the reader) simply does not reflect the actual reading performance of this reader. Reader #11 also scored quite high for semantic acceptability (55%), but his use of the cueing systems seems fairly balanced (if high for graphic and phonemic similarity). This reader did not share Reader #10's reluctance to speak in English. In both his reading interview and his retelling, he was among the most thorough of all readers. The profile he exhibits—high, but balanced, acceptability for all three cueing systems, along with his very good comprehension—may be typical of L2 readers who are very fluent in oral production. More research is needed on this type of ESL reader.

The somewhat confusing patterns of reading behavior found for these two readers suggest that, as mentioned above, researchers should exercise caution in

Table 3: Readers #10 and #11—Retelling Evaluation and Miscue Profile

	Retelling Evaluation	% of High Graphic Similarity	% of High Phonemic Similarity	% of Syntactic Acceptability	% of Semantic Acceptability
READER #10	Very Poor	36	45	76	52
READER #11	Very Good	62	56	60	55

interpreting the results of studies of second language students' oral reading. Nonetheless a number of clear and interesting trends emerge from the current investigation. To summarize, the study of internalized models of reading of beginning/low intermediate ESL subjects and the impact of those models on reading performance suggests the following conclusions: first, ESL readers do appear to have models of reading which they bring with them to the reading classroom. Nineteen out of twenty subjects could articulate their theoretical orientations towards reading unambiguously enough to be identified as sound-, word-, or meaning-centered. Second, a correspondence exists between the model of reading subjects hold and the type of information (graphic/sound, syntactic, or semantic) that the readers focus on in oral reading. Finally, a further relationship can be found between the internalized model of reading and the success of the reader in comprehending text material.

Implications

What implications do these results suggest? First, instructors involved in the teaching of L2 reading (and perhaps researchers investigating second language reading as well) should recognize that even beginning level students bring to the reading task a set of assumptions and operating principles concerning what is important in reading. And, since these theoretical models appear to affect reading performance in at least two ways—in cues focused on in oral reading and in the comprehension of the text—these instructors should attempt to identify the models that students hold. This might be done informally by having the students as a group discuss questions of the sort addressed in the Reading Interview (see Appendix A). Second, a meaning-centered approach to reading seems to predict more successful comprehension than a word-centered or (especially) a sound-centered approach; instructors might give thought to how they can assist students in adopting reading strategies that could be called *meaning-centered*. Clarke and Silberstein (1977) and Renault (1981) have offered valuable suggestions in this regard. The *language experience* approach seems particularly fruitful in encouraging L2 reading students to focus primary attention on meaning in a written text (see Rigg, 1981). And finally, in connection with the previous suggestion, teachers should be aware that some materials and classroom activities, for example, vocabulary drills and pronunciation practice, might inadvertently reinforce word- or sound-centered internalized models of reading and may very well orient the L2 reader away from meaning.

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APPENDIX A—READING INTERVIEW

Sample Questions from Reading Interview (see Burke, 1978)

1. When you are reading and you come to something you don't understand, what do you do? Do you ever do anything else?
2. Who is a good reader that you know? What makes _____ a good reader?
3. If you knew someone who was having difficulty with reading, how would you help that person?
4. What would you like to do better as a reader?

APPENDIX B—READER PROFILES

	Retelling Evaluation	% of High Graphic Similarity	% of High Phonemic Similarity	% of Syntactic Acceptability	% of Semantic Acceptability	% of Non-words
Sound-Centered						
Reader 1	Poor	59	51	73/60*	38	34
2	Poor	52	48	74/60*	40	26
3	Very Poor	55	65	69/61*	35	23
4	Very Poor	76	57	44/41*	33	23
5	Poor	61	51	50/45*	23	42
6	Very Poor	90	65	65/59*	28	32
Word-Centered						
Reader 7	Poor	64	41	59	40	21
8	Poor	41	33	55	35	24
9	Poor	47	33	68	42	4
10	Very Poor	36	45	76	52	18
11	Very Good	62	56	60	55	13
12	Fair	55	44	67	40	27
13	Fair	33	33	60	48	16
Meaning-Centered						
Reader 14	Good	57	47	60	58	9
15	Good	51	48	59	57	11
16	Excellent	52	33	58	52	9
17	Excellent	34	23	63	55	12
18	Very Good	33	22	55	47	7
19	Excellent	53	39	61	50	7

*Percentage excluding non-words